NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

AN ORDER OF THE BOARD

NO. P.U. 49(2018)

IN THE MATTER OF the *Electrical Power Control Act, 1994*, SNL 1994, Chapter E-5.1 (the "*EPCA*") and the *Public Utilities Act*, RSNL 1990, Chapter P-47 (the "*Act*"), as amended, and regulations thereunder; and

IN THE MATTER OF an application by Newfoundland and Labrador Hydro for approval of a Pilot Agreement for the Optimization of Hydraulic Resources, a Hydraulic Resources Optimization Deferral Account, and revised Rate Stabilization Plan rules pursuant to sections 69(3), 70, 71 and 76 of the *Act*.

Application

On August 23, 2018 Newfoundland & Labrador Hydro ("Hydro") filed an application for approval of a Pilot Agreement for the Optimization of Hydraulic Resources, a Hydraulic Resources Optimization Deferral Account, and revised Rate Stabilization Plan rules (the "Application").

The Application stated that Hydro had entered into a power purchase agreement with Nalcor Energy Marketing ("NEM") for the purchase of energy from external markets with an aim to improve reliability and provide lower cost supply to customers of the Island Interconnected system. The Application further stated that the availability of the Maritime Link and the Labrador Island Link provides the opportunity for Hydro and NEM to create additional value for customers from the use of Hydro's reservoirs to undertake "Ponding". The Application explained that Ponding refers to the purchase and import of low cost energy from off-island sources and the export and sale of an offsetting amount of energy at another time when market prices are higher relative to when the import occurred. The Application elaborated that Ponding opportunities arise from the variability in energy supply costs in external markets.

The Application noted that the availability of the Maritime Link and the Labrador Island Link also provides an opportunity for Hydro to sell excess energy from the Island Interconnected system, which would otherwise be spilled ("Spill Energy"), to NEM which, in turn, can sell such excess energy to external markets to generate additional revenues. The Application asserted that such

sales of energy will have no impact on Hydro's ability to meet customers' load requirements nor will it take precedence over Hydro's commitment to the provision of reliable service.

The Application proposed that the Pilot Agreement would be for a term that would expire on the earlier of December 31, 2020 or upon execution and approval by the Board of the longer-term agreement for the optimization of hydraulic resources that Hydro and NEM are currently in the process of negotiating ("Final Agreement"). The Application noted that the Pilot Agreement includes a provision to ensure there will be no cumulative change in Hydro's production as a result of Ponding activities at the conclusion of the Pilot Agreement. The Pilot Agreement also provides that NEM shall bear all financial responsibility and risk in the event that a net gain fails to materialize from Ponding activities.

The Application also proposed the establishment of a Hydraulic Resources Optimization Deferral Account ("Deferral Account") and modifications to the existing Rate Stabilization Plan ("RSP") rules to appropriately reflect the realization and disposition of net profits from Ponding and to ensure that the amount of hydraulic generation dispatched to sell Spill Energy to NEM is properly excluded from the calculation of Holyrood fuel costs to be recovered via the RSP. The Application noted that the Pilot Agreement provides for Hydro to track and hold the financial net gains resulting from Ponding and the sale of Spill Energy in the Deferral Account and that Hydro would file a separate application to the Board for approval of the allocation of the net gains between Hydro and NEM. The Application stated that, should there be a negative balance in the Deferral Account upon termination of the Pilot Agreement, NEM would reimburse Hydro for the negative amount in the Deferral Account that was attributable to Ponding.

The Application was copied to Newfoundland Power Inc. ("Newfoundland Power"); the Consumer Advocate, Dennis Browne, Q.C.; a group of Island Industrial customers: Corner Brook Pulp and Paper Limited, NARL Refining Limited Partnership, and Vale Newfoundland and Labrador Limited (the "Industrial Customer Group"); Teck Resources Ltd; and Praxair Canada Inc.

The Board and Newfoundland Power issued requests for information ("RFIs"). Hydro responded to the RFIs on September 20, 2018 and indicated that it would file a confidentiality application with respect to its response to PUB-NLH-015. On November 29, 2018 the Board issued Order No. P.U. 41(2018) which ordered that a portion of Hydro's response to PUB-NLH-015 would be considered confidential.

On December 6, 2018 the Industrial Customer Group and Newfoundland Power filed submissions on the Application. On December 11, 2018 Hydro filed its reply submission. No other submissions were filed in relation to the Application.

Submissions

The Industrial Customer Group advised that it did not have any comment on the Application.

Newfoundland Power agreed that the proposed Ponding activities and the related sale of Spill Energy have the potential to benefit ratepayers, including the customers of Newfoundland Power. Newfoundland Power also supported the use of the Deferral Account to capture the costs and

revenues pertaining to Ponding activities and the sale of Spill Energy, as well as Hydro's proposed revisions to the RSP rules.

Newfoundland Power submitted that the pilot period presents an opportunity to fully assess how the proposed Ponding activities can be optimized for the benefit of ratepayers. Newfoundland Power proposed that a two-year pilot period would provide sufficient time for Hydro to gain experience with Ponding as well as to report to the Board and interested parties on that experience. Newfoundland Power submitted that this report should be filed with the Board before the Final Agreement is approved.

Hydro agreed with Newfoundland Power that it should be required to report to the Board on its experience with Ponding activities during the pilot period and proposed to include updates in its quarterly reporting to the Board. Hydro indicated that it plans to file for approval of the Final Agreement in 2019 and cautioned that it is possible that not much information would be available on the experience of the Pilot Agreement at that time. Hydro further submitted that the proposal of Newfoundland Power to report on the pilot period prior to the approval of the Final Agreement may delay timely implementation of the potential benefits from the Final Agreement to ratepayers. Hydro requested that the Application be approved as submitted.

Board Findings

The Board is satisfied that the proposed Ponding activities as well as the sale of Spill Energy has the potential to benefit Hydro and its customers. The Board notes that the Pilot Agreement provides that NEM assume all financial responsibility and risk in the event that there is no net gain from Ponding activities thereby shielding ratepayers from any potential losses during the pilot period.

The Board agrees with Newfoundland Power's assessment that the pilot period provides an opportunity to evaluate and optimize the Ponding and related Spill Energy activities. Hydro advised in their submission that there may not be much information to evaluate at the point in time when the Final Agreement is filed with the Board for approval sometime in 2019. Given the importance of ensuring that correct practices are in place to facilitate the efficient and transparent tracking and reporting of Ponding and Spill Energy transactions, the Board sees merit in having a pilot period with an extended timeframe sufficient to gather the information necessary to effect this. Potential benefits to Hydro and its customers will still accrue during the pilot period leading up to the Final Agreement. In the Board's view a one-year pilot period should provide adequate time and information for an assessment of the Pilot Agreement prior to consideration of the Final Agreement.

The Board is satisfied with the use of the Deferral Account as a means to capture the costs and revenues related to Ponding activities and the sale of Spill Energy, and with the proposed revisions to the RSP rules to accommodate the Pilot Agreement.

IT IS THEREFORE ORDERED THAT:

1. The application for approval of the Pilot Agreement for the Optimization of Hydraulic Resources is approved.

2. The proposed Hydraulic Resources Optimization Deferral Account, as set out in Schedule A, is approved.

3. The revised Rate Stabilization Plan rules, as set out in Schedule B, are approved.

4. The Pilot Agreement shall be in effect a minimum of one year prior to the filing for approval of the Final Agreement.

5. Hydro shall provide updates on its Ponding and Spill Energy activities as part of its quarterly reporting to the Board during the period that the Pilot Agreement is in effect.

6. Hydro shall file, as part of its filing for approval of the Final Agreement, a report summarizing its experience related to Ponding and Spill Energy activities during the pilot period as well as any measures taken during the pilot period to enhance the effectiveness of the Ponding and Spill Energy activities.

7. Hydro shall pay all expenses of the Board arising from this Application.

DATED at St. John's, Newfoundland and Labrador, this 18th day of December, 2018.

Darlene Whalen, P. Eng., FEC
Chair & CEO

James Oxford
Commissioner

John O'Brien, FCPA, FCA, CISA
Commissioner

Cheryl Blundon
Board Secretary

Newfoundland and Labrador Hydro
Hydraulic Resources Optimization Deferral Account

This account shall be charged and credited with the monthly revenues and costs associated with hydraulic optimization activities. The Hydraulic Resources Optimization Deferral Account shall be calculated by the following formula, in dollars:

Monthly Transfer = Net Ponding Revenue + Spill Export Revenue

Net Ponding Revenue is the net effect of all ponding activities and is calculated as follows:

Net Ponding Revenue = A - B + C + D

A = Hydro's revenues from the sale of ponding energy to Nalcor Energy Marketing (NEM) (Ponding Exports). These revenues shall be calculated net of all transmission losses and Actual Net Costs[1] incurred by NEM in selling Ponding Exports into external markets.

B = Hydro's costs of purchasing ponding energy from NEM (Ponding Imports). These costs shall include the electricity purchases costs paid by NEM, including all transmission losses, and Actual Net Costs incurred by NEM in purchasing Ponding Imports.

C = Reimbursement by NEM to Hydro for the cost of Ponding Imports that are spilled (Ponding Spill), if applicable. Should Ponding Spill occur, NEM will reimburse Hydro on a last-in/first-out basis as the most recently purchased Ponding Imports will be assumed to be spilled first.

D = Cost of Ponding Imports used to serve Hydro's customers, if applicable. The unit cost of Ponding Imports used to serve Hydro's customers will be based on the average cost of all Ponding Imports in Hydro's reservoirs at the time Ponding Imports are used by Hydro.

Spill Export Revenue is the revenue from the sale of Spill Energy to NEM in order to avoid the spill of water from Hydro's reservoirs and is calculated as follows:

Spill Export Revenue = Hydro's revenues from the sale of Spill Energy, net of all transmission losses and Actual Net Costs incurred by NEM in selling Spill Energy into external markets.

Disposition of any Balance in this Account

Hydro will file a separate application for the Board's approval of the disposition of any balance in the Hydraulic Resources Optimization Deferral Account.

[1] As defined in the Pilot Agreement for Optimization of Hydraulic Resources.

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN

The Rate Stabilization Plan of Newfoundland and Labrador Hydro (Hydro) is established for Hydro's Utility customer, Newfoundland Power, and Island Industrial customers to smooth rate impacts for variations between actual results and Test Year Cost of Service estimates for:

- hydraulic production;
- No. 6 fuel cost used at Hydro's Holyrood generating station;
- customer load (Utility and Island Industrial); and
- rural rates.

The formulae used to calculate the Plan's activity are outlined below. Positive values denote amounts owing from customers to Hydro whereas negative values denote amounts owing from Hydro to customers.

Section A: Hydraulic Production Variation

1. Activity:

Actual monthly production is compared with the Test Year Cost of Service Study in accordance with the following formula:

$$\{(A - B) \div C\} \times D$$

Where:

A = Test Year Cost of Service Net Hydraulic Production (kWh)
B = Actual Net Hydraulic Production + Net Ponded Energy – Spill Exports (kWh)
C = Test Year Cost of Service Holyrood Net Conversion Factor (kWh /bbl.)
D = Monthly Test Year Cost of Service No. 6 Fuel Cost ($Can /bbl.)

Net Ponded Energy is defined as energy imports in kWh for ponding (Ponding Imports) less energy generated in kWh for the purposes of sale to external markets (Ponding Exports). The calculation of Net Ponded Energy shall exclude any Ponding Imports used to serve native load and spilled Ponded Energy (Ponding Spill), if applicable.

Spill Exports reflects production of energy during the month for sale to external markets to avoid spill (kWh), if applicable.

The metering point for determining the Ponding Imports is at Bottom Brook or the Labrador-Quebec border, as applicable. The metering point for Ponding Exports and Spill Exports is at Hydro's generation.

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

2. Financing:
Each month, financing charges, using Hydro's approved Test Year weighted average cost of capital, will be calculated on the balance.

3. Hydraulic Variation Customer Assignment:
Customer assignment of hydraulic variations will be performed annually as follows:

$$(E \times 25\%) + F$$

Where:

E = Hydraulic Variation Account Balance as of December 31, excluding financing charges
F = Financing charges accumulated to December 31

The total amount of the Hydraulic Customer Assignment shall be removed from the Hydraulic Variation Account.

4. Customer Allocation:
The annual customer assignment will be allocated among the Island Interconnected customer groups of (1) Newfoundland Power; (2) Island Industrial Firm; and (3) Rural Island Interconnected. The allocation will be based on percentages derived from 12 months-to-date kWh for: Utility Firm and Firmed-Up Secondary invoiced energy, Industrial Firm invoiced energy, and Rural Island Interconnected bulk transmission energy.

The portion of the hydraulic customer assignment which is initially allocated to Rural Island Interconnected will be re-allocated between Newfoundland Power and regulated Labrador Interconnected customers in the same proportion which the Rural Deficit was allocated in the approved Test Year Cost of Service Study.

The Newfoundland Power and Island Industrial customer allocations shall be included with the Newfoundland Power and Island Industrial RSP balances respectively as of December 31 each year. The Labrador Interconnected Hydraulic customer allocation shall be written off to Hydro's net income (loss).

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

Section B: Fuel Cost Variation, Load Variation and Rural Rate Alteration

1. Activity

1.1 Fuel Cost Variations

This is based on the consumption of No. 6 Fuel at the Holyrood Generating Station:

$$(G - D) \times H$$

Where:

D = Monthly Test Year Cost of Service No. 6 Fuel Cost ($Can /bbl.)
G = Monthly Actual Average No. 6 Fuel Cost ($Can /bbl.)
H = Monthly Actual Quantity of No. 6 Fuel consumed less No. 6 fuel consumed for non-firm sales (bbl.)

1.2 Load Variations

Firm: Firm load variation is comprised of fuel and revenue components. The load variation is determined by calculating the difference between actual monthly sales and the Test Year Cost of Service Study sales, and the resulting variance in No. 6 fuel costs and sales revenues. It is calculated separately for Newfoundland Power firm sales and Industrial firm sales, in accordance with the following formula:

$$(I - J) \times \{(D \div C) - K\}$$

Where:

C = Test Year Cost of Service Holyrood Net Conversion Factor (kWh /bbl.)
D = Monthly Test Year Cost of Service No. 6 Fuel Cost ($Can /bbl.)
I = Actual Sales, by customer class (kWh)
J = Test Year Cost of Service Sales, by customer class (kWh)
K = Firm energy rate, by customer class

Secondary: Secondary load variation is based on the revenue variation for Utility Firmed-Up Secondary energy sales compared with the Test Year Cost of Service Study, in accordance with the following formula:

$$(J - I) \times L$$

Where:

I = Actual Sales (kWh)
J = Test Year Cost of Service Sales (kWh)
L = Secondary Energy Firming Up Charge

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

1.3 Rural Rate Alteration

Newfoundland Power Rate Change Impacts:
This component is calculated for Hydro's rural customers whose rates are directly or indirectly impacted by Newfoundland Power's rate changes, with the following formula:

$$(M - N) \times O$$

Where:

M = Cost of Service rate
N = Existing rate
O = Actual Units (kWh, bills, billing demand)

2. Monthly Customer Allocation: Load and Fuel Activity

Each month, the year-to-date total for fuel price variation and the year-to-date total for the load variation will be allocated among the Island Interconnected customer groups of (1) Newfoundland Power; (2) Island Industrial Firm; and (3) Rural Island Interconnected. The allocation will be based on percentages derived from 12 months-to-date kWh for: Utility Firm and Firmed-Up Secondary invoiced energy, Industrial Firm invoiced energy, and Rural Island Interconnected bulk transmission energy.

The year-to-date portion of the fuel price variation and the year-to-date portion of the load variation which is initially allocated to Rural Island Interconnected will be re-allocated between Newfoundland Power and regulated Labrador Interconnected customers in the same proportion which the Rural Deficit was allocated in the approved Test Year Cost of Service Study.

The current month's activity for Newfoundland Power, Island Industrials and regulated Labrador Interconnected customers will be calculated by subtracting year-to-date activity for the prior month from year-to-date activity for the current month. The current month's activity allocated to regulated Labrador Interconnected customers will be removed from the Plan and written off to Hydro's net income (loss).

3. Monthly Customer Allocation: Rural Rate Alteration Activity

Each month, the rural rate alteration will be allocated between Newfoundland Power and regulated Labrador Interconnected customers in the same proportion which the Rural Deficit was allocated in the approved Test Year Cost of Service Study. The portion allocated to regulated Labrador Interconnected will be removed from the Plan and written off to Hydro's net income (loss).

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

4. Plan Balances

Separate plan balances for Newfoundland Power, the Island Industrial customer class and the segregated load variation will be maintained. The RSP balances shall be adjusted by other amounts as ordered by the Board. Financing charges on the plan balances will be calculated monthly using Hydro's approved Test Year weighted average cost of capital.

Section C: Fuel Price Projection

A fuel price projection will be calculated to anticipate forecast fuel price changes and to determine fuel riders for the rate adjustments. For industrial customers, this will occur in October each year, for inclusion with the RSP adjustment effective January 1. For Newfoundland Power, this will occur in April each year, for inclusion with the RSP adjustment effective July 1.

1. Industrial Fuel Price Projection:

In October each year, a fuel price projection for the following January to December shall be made to estimate a change from Test Year No. 6 Fuel Cost. Hydro's projection shall be based on the change from the average Test Year No. 6 fuel cost, in Canadian dollars per barrel, determined from the forecast oil prices provided by the PIRA Energy Group, and the current US exchange rate. The calculation for the projection is:

$$[\{(S + T) \times U\} - V] \times W$$

Where:

S = the September month-end PIRA Energy Group average monthly forecast for No. 6 fuel prices at New York Harbour for the following January to December
T = Hydro's average fuel contract premium or (discount) ($US/bbl) for the following January to December
U = the monthly average of the $Cdn / $US Bank of Canada Exchange Rate for the month of September
V = average Test Year Cost of Service cost of No. 6 Fuel ($Can /bbl.)
W = the number of barrels of No. 6 fuel forecast to be consumed at the Holyrood Generating Station for the Test Year for the Test Year, or an alternate forecast number of barrels as approved by the Board.

The industrial customer allocation of the forecast fuel price change will be based on 12 months-to-date kWh as of the end of September and is the ratio of Industrial Firm invoiced energy to the total of: Utility Firm and Firmed-Up Secondary invoiced energy, Industrial Firm invoiced energy, and Rural Island Interconnected bulk transmission energy.

The amount of the forecast fuel price change, in Canadian dollars, and the details of an estimate of the fuel rider based on 12 months-to-date kWh sales to the end of September will be reported to industrial customers, Newfoundland Power, and the Public Utilities Board, by the 10th working day of October.

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

2. Newfoundland Power Fuel Price Projection:

In April each year, a fuel price projection for the following July to June shall be made to estimate a change from Test Year No. 6 Fuel Cost. Hydro's projection shall be based on the change from the average Test Year No. 6 fuel cost, in Canadian dollars per barrel, determined from the forecast oil prices provided by the PIRA Energy Group, and the current US exchange rate. The calculation for the projection is:

$$[\{(X + T) \times Y\} - V] \times W$$

Where:

T = Hydro's average fuel contract premium or (discount) ($US/bbl) for the following July to June

V = average Test Year Cost of Service cost of No. 6 Fuel ($Can /bbl.)

W = the number of barrels of No. 6 fuel forecast to be consumed at the Holyrood Generating Station for the Test Year, or an alternate forecast number of barrels as approved by the Board.

X = the average of the March month-end PIRA Energy Group average monthly forecast for No. 6 fuel prices at New York Harbour for July to December of the current year and for the January to June period of the subsequent year.

Y = the monthly average of the $Cdn / $US Bank of Canada Exchange Rate for the month of March

The Newfoundland Power customer allocation of the forecast fuel price change will be based on 12 months-to-date kWh as of the end of March and is the ratio of Newfoundland Power Firm and Firmed-Up Secondary invoiced energy to the total of: Utility Firm and Firmed-Up Secondary invoiced energy, Industrial Firm invoiced energy, and Rural Island Interconnected bulk transmission energy.

The amount of the forecast fuel price change, in Canadian dollars, and the details of the resulting fuel rider applied to the adjustment rate will be reported to Newfoundland Power, industrial customers, and the Public Utilities Board, by the 10th working day of April.

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

Section D: Adjustment

1. Newfoundland Power

As of March 31 each year, Newfoundland Power's adjustment rate for the 12-month period commencing the following July 1 is determined as the rate per kWh which is projected to collect:

Newfoundland Power March 31 Balance

less projected recovery / repayment of the balance for the following three months (if any), estimated using the energy sales (kWh) for April, May and June from the previous year

plus forecast financing charges to the end of the 12-month recovery period (i.e., June in the following calendar year),

divided by the 12-months-to-date firm plus firmed-up secondary kWh sales to the end of March.

A fuel rider shall be added to the above adjustment rate, based on the Newfoundland Power Fuel Price Projection amount (as per Section C.2 above) divided by 12-months-to-date kWh sales to the end of March.

When new Test Year base rates come into effect, if a fuel rider forecast (either March or September) is more current than the test year fuel forecast, a fuel rider will be implemented at the same time as the change in base rates reflecting the more current fuel forecast and the new test year values.

Otherwise, the fuel rider portion of the RSP Adjustment will be set to zero upon implementation of the new Test Year Cost of Service rates, until the time for the next fuel price projection.

NEWFOUNDLAND AND LABRADOR HYDRO
RATE STABILIZATION PLAN (Continued)

2. Island Industrial Customers

As of December 31 each year, the adjustment rate for industrial customers for the 12-month period commencing January 1 is determined as the rate per kWh which is projected to collect:

Industrial December 31 Balance

plus forecast financing charges to the end of the following calendar year,

divided by 12-months-to-date kWh sales to the end of December.

A fuel rider shall be added to the above adjustment rate, based on the Industrial Fuel Price Projection (as per Section C.1 above) amount divided by 12-months-to-date kWh sales to the end of December.

When new Test Year base rates come into effect, if a fuel rider forecast (either March or September) is more current than the test year fuel forecast, a fuel rider will be implemented at the same time as the change in base rates reflecting the more current fuel forecast and the new test year values. Otherwise, the fuel rider portion of the RSP Adjustment will be set to zero upon implementation of the new Test Year Cost of Service rates, until the time for the next fuel price projection.

Section E: RSP Surplus:

The Newfoundland Power allocated amount of the RSP Surplus will be refunded to Newfoundland Power and Hydro's Rural customers in accordance with Hydro's Customer Refund Plan approved in Order No. P.U. 36(2016).

Financing charges on the Newfoundland Power plan balance will be calculated monthly using Hydro's approved Test Year weighted average cost of capital.